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Learning Styles of General Foundation Programme Students: Basis For Enhanced Teaching Methodology

Rosanna Manalo[1]
Amabelle Oliva Enanoria[2]
Raiya Al Mahruqi[3]

Abstract

Primordial to educators is to ensure that quality learning takes place -- unleash students' potentials by their own capacity and interests. The study aims to determine the students' learning styles and correlate to propose teaching methodologies. In a descriptive-evaluative method, 67 respondents from GFP-Gulf College, Sultanate of Oman AY 2020-2021 participated in a web-administered- 24-statement- instrument of VAK learning style of Neil Fleming (Fleming, 2001). Frequency-Percentages profiled the students into gender and mode of study; performed two-sample-t-test to obtain mean-difference- of learning styles' scores by Gender and Mode of Study; Kendall's-Tau-b to correlate gender and study-mode to learning style; & Partial Correlation to relate gender and learning styles removing study-mode effect. Students are mostly visual learners particularly females. Males are auditory- oriented. Morning respondents are visual learners while evening respondents are visual- and auditory - combined. In visual and kinesthetic style, gender does not matter but in auditory learning, it does. Morning and evening study-modes do not differ in visual and kinesthetic learning but vary in auditory style. Evening students use auditory learning thus study-mode is statistically related to auditory learning. Controlling for the study-mode effect, gender to some extent affect auditory and kinesthetic learners. Males and

[1] Assist. Prof. Centre for Foundation Studies, Gulf College Muscat, Oman. e-mail: rosanna@gulfcollege.edu.om, ORCID: 0009-0004-9031-3285

[2] Lecturer, Preparatory Studies Centre (PSC) of University of Technology and Applied Sciences- Ibra Oman. e-mail: amabelle.enanoria@utas.edu.om, ORCID: 0000-0001-7554-158X

[3] English Lecturer, Centre for Foundation Studies at Gulf College Muscat Oman. e-mail: raiya@gulfcollege.edu.om, ORCID: 0009-0002-7424-8263

females do not differ in visual and kinesthetic but vary in auditory. Association of gender and study-mode to auditory learning is significantly weak. Regardless of gender and mode of study, auditory or visual styles are preferred. Removing study-mode effect, there are more male-auditory learners. Determining learning style is an advantage for differing teaching strategies.

Keywords: Learning style, learning preferences, teaching methodology, visual, kinesthetic, auditory

Introduction

The need for constant innovation in the field of education is a major challenge for all educators. The primordial goal of every educator is to ensure that quality learning is taking place inside the classroom. Indeed, in order to attain that goal, every classroom teacher must be equipped with up-to-date methodologies to address the needs of every learner. However, the advent of technology along with the behaviour of the youngsters today, greatly affects the way learners participate and involve in the learning milieu.

Seemingly, another thing to consider as part of the classroom challenges is the attention rate of most students nowadays. It has been observed that student's attention span is becoming a great issue in the classroom. Teachers can no longer make a one-hour discussion even if there are concepts that need to be explicitly explained. Students become so restless and inattentive during and within discussion if it is taking beyond half an hour. In this case, teachers should try to innovate and come up with strategies to meet the needs of the students without overlooking the salient points of the lesson. Thus, different activities should take place in the classroom to capture the attention of the students and allow them to actively participate in the learning process.

Indeed, every learner has the capacity to participate in a learning milieu where he could best profess his aptitude and create a well-established self-identity. In order to actualise all the needs of learners, educators must be able to recognise the varying ways on how students learn according to their capacity and interests. Indeed, the trend of present education is to be able to unleash the potential of the learners without reservation. It is true that student's way of understanding the lessons in the classroom largely depend on their learning style. Seemingly, a student who may seem to be passive

and inactive should not be judged as slow learner. Likewise, active learners should also be given appropriate activities that would suit to their ability and interest.

Certainly, the intelligence of the student cannot be judged by merely looking at his behaviour in the classroom as well as in the written output. Some students can best learn according to their own styles.

Background of the Study

Gulf College is a premier higher education institution located in Muscat, Sultanate of Oman. The origin of the institution dates back to 1990 when it was established as a professional and vocational training provider in the Sultanate of Oman. In 1996, the training institute obtained the approval of the Ministry of Higher Education for offering the Master's degree in Business Administration (MBA) through the International Outreach arrangement with the University of Hull. In 2003, it was granted the approval from the Ministry of Higher education to upgrade the status from a training institute to a Higher Education College ("About Us – Gulf College", 2021).

Currently, the College offers Bachelor of Arts (Honours) in Accounting and Finance, Business and Management Studies, Business Economics, Marketing Management, Bachelor of Science (Honours) in Business Information Systems, Computer science with pathways in Artificial Intelligence, Data Analytics and Mobile Computing in academic affiliation with Cardiff Metropolitan University (Cardiff Met), UK. In addition, the college offers full-time and part-time Master of Business Administration (MBA) with pathways in Project Management, Finance, Marketing, Islamic Finance and Health Sector Management in academic affiliation with Cardiff Met. The college runs Bachelor of Science (Honours) in Computing Science, Mobile Computing and Information Systems in academic affiliation with the Staffordshire University. The college also offers its own General Foundation Programme ("About Us – Gulf College", 2021).

The General Foundation Programme is a year-long programme. Students who pass the GFP must pass in all 5 required modules. Semesters in an academic year can be referred to by the terms "Fall" (September-January) and "Spring" (March-June). All the modules of GFP will be available for all GFP students, but the allocation of the students will be according to the

results in the Placement Test. Each module will have morning and evening sections. Each section will have a maximum number of 20 students. As soon as a section is full, it is closed and the second section is opened. The administrator manages the process. The Academic Advisors approve the timetable for each of their advisees.

Five modules are offered in the GFP. Students must complete all modules, unless exempted from a module via transfer credits, placement test result, or an approved form of certification. It is recommended that new students entering the GFP programme begin their first semester with Basic Math and General English 1, and take the remaining three modules during their second semester. However, if a student has exemptions in one of the modules normally taken in a student's first semester, it is acceptable for them sign up for another class (for example, IT) during their first semester.

GFP Semester 1 has General English and Basic Mathematics Modules. General English consists of writing, speaking, listening and reading which are then assessed on the 16th week of the semester while Basic Mathematics module's assessment is in the form of written and oral test at the end of the semester.

Significance of the Study

This study will positively encourage the students to be aware of their respective learning styles. Likewise, the teachers can prepare different kinds of activities intended to enhance the varying learning preferences of the students.

Module coordinators may come up with some efficient and well-designed programs related to effective teaching strategies which will address the learning needs of the students. Seemingly, the study may also serve as a guide to curriculum designers to provide various ways of identifying the learning styles of the students through standardized tool.

Scope and Limitations of the Study

This study was conducted to Semester 1 students of General Foundation Programme (GFP) of Gulf College during the "Spring" (March-June) of Academic Year 2020- 2021 to determine the learning styles of the students. Semester 1 students were chosen as respondents so that when they proceed to Semester 2, teachers can appropriately employ necessary teaching methodologies/strategies in order to meet their students' learning styles.

Theoretical Framework

The researchers adopted the VAK learning style of Neil Fleming (Fleming, 2001). Fleming used the three main sensory receivers: Visual, Auditory, and Kinesthetics (movement). According to this model, most people possess a dominant or preferred learning style; however, some people have a mixed and evenly balanced blend of the three styles: visual learners, auditory learners and kinesthetic learners. He explicitly identified the characteristics of each learning style.

For example, **visual learners** tend to learn through seeing, think in pictures and need to create vivid mental images to retain information, enjoy looking at maps, charts, pictures, videos, and movies, have visual skills which are demonstrated in puzzle building, reading, writing, understanding charts and graphs, a good sense of direction, sketching, painting, creating visual metaphors and analogies (perhaps through the visual arts), manipulating images, constructing, fixing, designing practical objects, and interpreting visual images.

Seemingly, **auditory learners** tend to learn through listening. They have highly developed auditory skills and are generally good at speaking and presenting. They think in words rather than pictures, learn best through verbal lectures, discussions, talking things through and listening to what others have to say. They have auditory skills demonstrated in listening, speaking, writing, storytelling, explaining, teaching, using humor, understanding the syntax and meaning of words, remembering information, arguing their point of view, and analyzing language usage.

Consequently, **kinesthetic learners** tend to learn through moving, doing and touching. They express themselves through movement. Likewise, they have good sense of balance and eye-hand coordination. They also remember and process information through interacting with the space around them. However, they find it hard to sit still for long periods and may become distracted by their need for activity and exploration. They have skills demonstrated in physical coordination, athletic ability, hands on experimentation, using body language, crafts, and acting, miming, using their hands to create or build, dancing, and expressing emotions through the body.

The VAK Learning Styles of Neil Fleming served as the basis of the theoretical framework of this study. Indeed, this framework would be of varying significance in as much as this study was conducted. The framework presented and used was employed in figuring out its conceptual framework.

Conceptual Framework

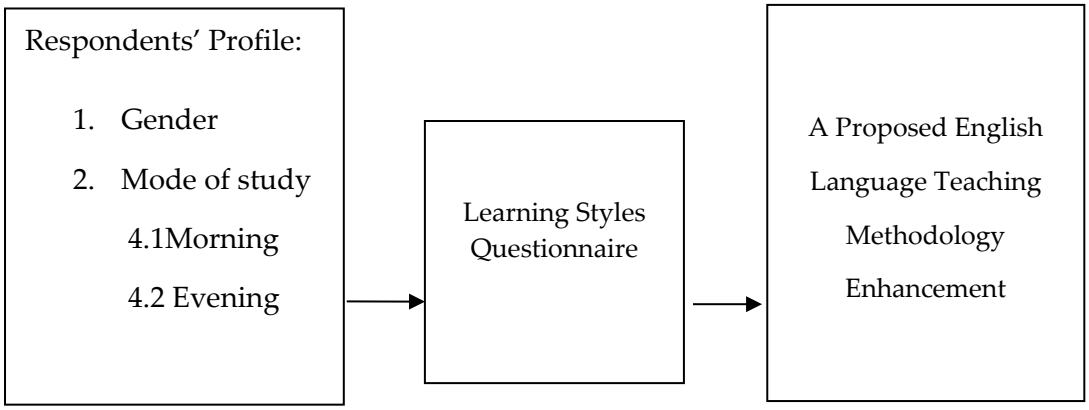

Figure 1. A Conceptual Model of Selected Variables and Students' Learning Styles

The conceptual framework in Figure 1 presented the different variables in this study. The boxes represented the input, process and output of the study.

The *Input* consists of profile such as gender and mode of study. The arrow pointing to the *Process* is the survey instrument that determines the learning styles of the students such as visual, auditory and kinaesthetic. Hence, the *Output* is the proposed English teaching methodologies that teachers can employ in their respective classes.

Research Objectives

Educators and teachers need to understand the different and varying learning styles of the students in order to help them unleash their potentials. The study aims to:

1. Determine the learning styles of Semester 1 students;
2. Come up with proposed teaching methodologies for the teachers;
3. Employ appropriate teaching methodologies to meet the students' learning preferences

Statement of the Problem

1. What is the profile of the respondents in terms of:
   - 1.1 Gender
   - 1.2 Mode of study
     - 1.2.1 Morning
     - 1.2.2 Evening
2. To what learning styles do the respondents belong when they are grouped according to?
   - 2.1 Visual
   - 2.2 Auditory
   - 2.3 Kinaesthetic
3. Is there any difference between the learning style and the respondent's profile in terms of?
   - 3.1 Gender
   - 3.2 Mode of study
     - 3.2.1 Morning
     - 3.2.2 Evening
4. What is the degree of influence of respondents' profile in terms of gender and learning style?
5. Does mode of study intervene in the correlation between gender and learning style?

REVIEW OF RELATED LITERATURE

Every learner has his or her own unique or specific way of perceiving the lesson. Generally, the idea that the way students learn is different from others. It is essential to understand the three categories of learning styles

as introduced by Neil Fleming as VARK or (VAK) Model of Student Learning such as visual, auditory, and kinesthetic. Fleming (2001) introduced The VARK model this model recognises that students have different styles as to how they process information, referred to as "preferred learning modes." The main idea of this model are as follows: ("Learning Styles", 2021)

- Students' preferred learning modes have significant influence on their behavior and learning.
- Students' preferred learning modes should be matched with appropriate learning strategies.
- Information that is accessed through students' use of their modality preferences shows an increase in their levels of comprehension, motivation and metacognition.

The term Learning Styles means that every student or learner learns differently. Seemingly, an individual's learning style refers to the preferential way in which the student absorbs, processes, comprehends and retains information. The need to know and understand whether a student is visual, auditory or kinesthetic will help educators to design the curriculum which will be aligned to the learning preferences of the students. In this way, teachers would be able to come up with teaching methods and techniques complementing the learning styles of the students. Moreover, when educators understand and become aware of the learning styles of the students, they can employ relevant and proper teaching strategies in their daily classroom activities and assessments.

In another online article, it has been emphasized the significance of VAK (Visual-Auditory-Kinesthetic). Fleming's model is one of the most common and widely used categorizations of learning styles and preferences. It provides a simple way to explain and understand the different learning preferences such as visual, where learners prefer to learn by seeing. They think of pictures. They like visual aids such as overhead slides, diagrams and handouts. Then auditory, where learners prefer to learn through listening. They like lectures, discussions and tapes. Lastly, kinesthetic, where learners prefer to learn through experience by moving, touching, and doing. They like exploration of the world such as science projects, building structures or models, and active experiments (Anon, 2021).

According to Clark (2008) as cited by Shaadi (2021) learners use all three modalities to receive and learn new information and experiences. Nonetheless, according to the VAK or modality theory, one or two of these receiving styles are normally dominant. This dominant style delineates the best way for a person to acquire new information by sifting what is to be learned. This style may not always be similar for some tasks. The learner may prefer one style of learning for one task, and a combination of others for a different task.

Another expert discussed the importance of multiple intelligences. Howard Gardner of Harvard has identified seven distinct intelligences. This theory has emerged from recent cognitive research and "documents the extent to which students possess different kinds of minds and therefore learn, remember, perform, and understand in different ways," according to Gardner (1991). According to this theory, all human beings are able to know the world through language, logical-mathematical analysis, spatial representation, musical thinking, and the use of the body to solve problems or to make things, an understanding of other individuals, and an understanding of ourselves ("Gardner's Multiple Intelligences, 2021).

Gardner says that these differences "challenge an educational system that assumes that everyone can learn the same materials in the same way and that a uniform, universal measure suffices to test student learning. Indeed, as currently constituted, our educational system is heavily biased toward linguistic modes of instruction and assessment and, to a somewhat lesser degree, toward logical-quantitative modes as well." Gardner argues that "a contrasting set of assumptions is more likely to be educationally effective. Students learn in ways that are identifiably distinctive. The broad spectrum of students - and perhaps the society as a whole - would be better served if disciplines could be presented in a number of ways and learning could be assessed through a variety of means" ("Gardner's Multiple Intelligences", 2021).

Indeed, the insights of the experts as regards learning styles are worthy of consideration. Theories and practice may be similar in some ways but it offers a distinct way of understanding the learning preferences of the students. For instance, the theory of Honey Mumford learning styles is very similar to Kolb's. They also have defined four (4) distinct learning styles. Mumford (2000) presented and explained his theory as Activist, these

learners prefer challenges brought by new experiences and activities. They dive right into new experience to learn from them. They are great in problem solving and role playing and enjoy small group discussions. Next is the Reflector, these learners prefer to learn by watching, thinking about what they have observed. They are cautious people and would start with investigation or observation before making any commitment. They collect and analyse data before making any kind of decision. Then the Theorist, these learners prefer to think things through step-by-step. They like complex and logical theories as they tend to analyse and synthesise situations, principles, and other processes. They typically prefer to listening to lectures, reading, and making models. Lastly, the Pragmatist, these learners prefer to take what they have learned and apply it to see if it works. They enjoy experimenting or applying theories in practice. They like laboratories, doing field work, and observations.

Moreover, Gregorc (1984) as cited by Shaaidi (2021) concludes that most successful students in a classroom happen to possess learning preferences that match the instructional method preferences of the teacher. He also contends that many students who refuse to accommodate to different styles may sometimes be labelled learning disabled.

Although similarities are quite relative in some aspects, still there are varying explanation and rationale on the idea learning styles and multiple intelligences. Awla (2014) discussed a similar learning style model, the Felder-Silverman model examines specific areas of personality that contribute to learning. They are active or reflective, sensing or intuitive, visual or verbal, inductive or deductive and sequential or global. A combination of these styles makes up the individuals learning preferences. He particularly mentioned about the different ways on how learners understand and utilise their abilities. He explained that learners with ***Sensing*** ability prefer concrete thinking, practical concerned with facts and procedures. ***Intuitive*** learners prefer conceptual thinking, innovative, concerned with theories and meanings. ***Visual*** learners prefer visual representations, pictures, diagrams and flowcharts, ***Verbal*** learners prefer written and spoken explanations. Active learners prefer to try things out, working with other groups. ***Reflective*** learners prefer thinking things through, working alone or with familiar partner, ***Sequential*** learners prefer linear thinking, orderly, learns in a small incremental steps and ***Global*** learners prefer holistic thinking, system thinkers, learns in large leaps. This

model focused on how personalities contribute to the acquisition of learning. Similarly, learning styles play a significant role in the lives of learners this is because when students recognize their own learning style, they will be able to integrate it into their learning process (Akram Awla, 2014).

The ideas and concepts given by Mestre (2012) on theories and models about learning style have significantly affirmed the importance of understanding the complexity of students' preferences and behaviour towards learning. He stated that learning style research has produced many theories and models that have been applied in various settings such as academia and industry to explain how different people approach learning, as well as how they acquire and process information. He further explained that some adaptations to learning styles may lead instructional developers to teach concepts using multiple illustrations. In such practices, the instructional material may illustrate concepts, presumably the complex ones, in different ways, leading learners to form multiple representations. The designer may assume that the multiple illustrations work because learners choose the representation that is most congruent to their learning styles. It is probably more likely that such instruction is effective because the multiple illustrations induce learners to devote more time to these concepts (Mestre, 2012).

A recent study conducted by Durmus & Guven (2020) entitled The Relationship Between Teaching Styles of English Instructors and Learning Styles of English Prep Class Students at a Turkish State University, emphasized that it is necessary to be aware of both teaching and learning styles and employing them in teaching and learning processes and as the two important stakeholders of this process, both learners and teachers are expected to benefit from each other at maximum level especially in terms of considering the needs of learners. The teaching styles of English teachers and learning styles of students were determined independently. Studies aiming at determining the direct effect of teaching styles on students' learning styles are thought to be able to contribute positively to both teachers and students. The reflective studies that teachers will make on their own teaching and learning styles will also be beneficial in terms of developing their awareness in the context of learning and teaching style (Durmus & Guven, 2020).

Likewise, a similar study on learning styles conducted by Salam (2021) entitled "An Analysis of Learning Styles and Learning Strategies Used by a Successful Language Learner" mentioned that awareness of preferred learning styles is very important because it has impacts on language learners' achievement in acquiring English. He said that skills such as listening, speaking, reading, and writing are the four main skills of English as an international language and they are integrated. These skills must be studied by language learners because English is used as a lingua franca to convey information and knowledge in both written and spoken during the teaching and the learning process by English lecturers in the English Education Study Program. Therefore, to carry out studies properly, language learners must master all English skills. The chosen learning style is very important for language learners to master all English skills mentioned above. In his study, he found out that the successful language learner who was categorized as a successful language learner was not achieving the goals of learning immediately. There was certain self-awareness of situations and learning behaviours called style preferences. This learning style preferences helped her to find out good strategies in learning English. The students' learning style preferences were Visual style and Individual style. Besides, the student also had steps taken in learning English and the steps contained various activities.

In a related study by Shaaidi (2021), it has been clearly mentioned that in teaching the English language, teachers are often confronted with students who are opposed to learning just because they have been compelled to learn by specific ways that not suitable their individual learning styles. Hence, the findings revealed that the majority of the upper form students preferred the Visual learning style which means that the students preferred the use of more media, pictorial materials, written materials, to name a few during the 1119 English language lessons. In this way the students are able to grasp on the English language even better as it assists them to have meaningful learning experiences, as based on Kolb's learning styles and Experiential learning Model, which closely refers to Concrete Experience model, where the students correspond to knowledge through direct acquaintance with the subject matter as this is direct experience for the students and because of that they will understand the lesson better. Another eye-opening result discovered through this research is that the students unanimously agreed that they are fond of learning by copying notes from board, listening to their

teachers teaching and copying it and also through reading and making some notes out of it (Wan Shaaidi, 2021).

It has been emphasized by Nikoopour & Khoshroudi (2021) in the study that they have conducted entitled *EFL Learners' learning styles and Self-Regulated Learning* that learning styles play important roles for the learners since they can integrate them to their learning process and accordingly their learning process would be faster and they will be more successful. Also, learners would resolve their problems more effectively when they identify their styles.

Herrell and Jordan (2008) mentioned that it is equally important to encourage students to demonstrate their understanding of content in a format consistent with their strong intelligences. It also inferred that being aware of the learning preferences of the students would give a sense of flexibility in planning instruction and assessment in order to support their knowledge and boost their self-esteem.

According to Miller (2001) as cited by Malik & Janjua, (2021) students' performance can be improved by adapting teaching approaches according to the different **learning style** preferences of our students. This would be a great help for the students and teachers alike to be aware of the learning styles so that appropriate teaching methodologies can be employed.

Indeed, all these varying models and theories on learning styles as well as related studies would truly help both the learners and the teachers to fully understand the complexities of the learning milieu. It is necessary for every educator to examine how each individual learner in the classroom would learn the best way without prejudices and to give equal opportunity for every learner to discover his/her learning preferences.

Methodology

This chapter presents the research methodology, population and sample size, description of the respondents, instrumentation, data gathering procedure, and statistical treatment employed and used by the researchers.

Research Method Used

The researchers made use of descriptive-evaluative method. This is a research method that focuses on present condition with a purpose of discovering new truth such as increased extent of knowledge, new generalization, an increased insight into factors that are operating, discovery of new causal-relationship, or more accurate formulation of the problem to be solved. Specifically, descriptive-evaluative is a design that will appraise carefully the worthiness of the current study (Zulueta & Costales, 2003). In this study the researchers sought to determine the learning styles among GFP Semester 1 students of Gulf College in the Sultanate of Oman.

Population and Sampling Frame

The researchers gathered the data for this study from the registered Semester 1 students from General Foundation Programme (GFP) 2nd Semester of AY 2020-201 of Gulf College in the Sultanate of Oman. There were sixty-seven (67) respondents who participated in the study.

Description of the Respondents

The respondents of this study were the Semester 1 students who were officially registered in the General Foundation Programme AY 2020-2021 of Gulf College, a private institution in the Sultanate of Oman. GFP Semester 1 has General English and Basic Mathematics Modules. General English consists of writing, speaking, listening and reading which are then assessed on the 16th week of the semester while Basic Mathematics module's assessment is in the form of written and oral test at the end of the semester.

Instrumentation

A Learning Questionnaire web adapted from University of California, Merced Student Advising and Learning Centre: University of Texas Learning Centre, 2006 was utilized to determine the learning styles of Semester 1 students. The questionnaire has twenty-four items/statements in English with a translation in Arabic so that respondents would have better

understanding of each statement. The questionnaire was given to semester 1 students AY 2020-2021 through Google form.

The questionnaire has twenty-four (24) statements that indicate the different learning styles such visual, auditory and kinesthetic. It has response options of "often, sometimes, and seldom with an interpretation and scoring format.

Data Gathering Procedure

Permission to conduct the study was sought primarily from the Deputy Dean for Research and Academics of Gulf College through the assistance of the Research Coordinator of the Centre for Foundation Studies. The Learning Style Questionnaire was encoded in Google form and was administered to Semester 1 students through the assistance of General English (GE1) lecturers as part of their class activity in English. After the accomplished instrument was administered and retrieved, collected data were coded, tabulated, and summarized in such a way that the data would be statistically treated.

Statistical Treatment

Statistical procedures were used to analyse the quantitative data. The information gathered was collated and interpreted using SPSS. Hence, the data obtained were tabulated, analysed, and interpreted accordingly. Specifically, the following statistical formulae were used to analyze the collected data:

1. Frequency and Percentage Distributions were used to classify the respondents according to personal profiles such gender and mode of study. The frequency also presented the actual response of the respondents to a specific question or item in the questionnaires.

The percentage of the item is computed by dividing it with the sample total number of respondents. The formula used in the application of this technique is:

$$\%= \frac{f}{n}(100)$$

where % = percentage
f = frequency
n = number of cases or total sample

2. Mean, the Standard Deviation and the SEM differences on the mean scores of various learning syles by Gender and Mode of Study are evaluated through a two-sample-t-test, showing the mean difference and the 95% CI.

3. Kendall's Tau-b Correlation is a bivariate correlation analysis through Kendall's Tau correlation coefficient was employed to document the degree of correlation between gender and each of the learning style average scores; mode of study and each of the learning style average scores.

4. Partial Correlation Analysis was adopted to address the relationship between gender and each of the learning style average scores. The partial correlation analysis takes the correlation between gender and learning style averages controlling for the effect of mode of study.

Presentation, Analysis and Interpretation of Data

1. What is the profile of the respondents in terms of?

Table 1. Frequency and Percentage Distribution of the Profile of the Respondents according to Gender

Gender	F	%
Male	40	59.7
Female	27	40.3
Total	67	100

Table 1 shows the frequency and percentage distribution of the respondents' profile according to gender. Out of the sixty-seven (67) respondents, there are forty (40) or 59.7 percent male and twenty-seven (27) or 40.3 percent female. This could imply that because most male respondents are working students hence, a diploma or bachelor's degree is a requirement for their promotion at work.

Table 2. Frequency and Percentage Distribution of the Profile of the Respondents according to Mode of Study

Mode of Study	F	%
Morning	47	70.1
Evening	20	29.9
Total	67	100

Table 2 presents the frequency and percentage distribution of the respondents' profile according to their mode of study. There are forty-seven (47) or 70.1 percent morning respondents while there are twenty (20) or 29.9 percent evening respondents. There is a gap in the number of participants for evening learners and the number of morning learners. This is due to the fact there are a smaller number of evening learners because they are currently employed by ministries or companies across the Sultanate and most of them are self-sponsored. There are more learners registered in morning schedule who are mostly teenagers and sponsored by ministry.

2. To what learning styles do the respondents belong when they are grouped according to:

Table 3. Frequency and Percentage Distribution of the Respondents' Learning Style

Learning Styles	F	%
Visual	24	35.8
Auditory	21	31.3
Kinesthetic	5	7.46
Auditory&Kinesthetic	5	7.46
Visual & Auditory	10	15
Visual & Kinesthetic	1	1.49
Combination Of Vak	1	1.49
Total	67	100

Table 3 presents the frequency and percentage distribution of the respondents' learning styles. Out of the sixty-seven (67) respondents, twenty-four (24) or 35.8 percent are visual learners while twenty-one (21) or 31.3 percent are auditory learners and five (5) or 7.46 percent is kinesthetic learner. There are also five (5) or 7.46 percent respondents who are both auditory and kinesthetic, likewise, ten (10) or 15 percent are both visual and auditory and one (1) or 1.49 percent both visual and kinesthetic and one (1) or 1.49 percent for visual, auditory and kinesthetic learning styles.

It can be gleaned from the data above that **majority of the respondents are visual learners and auditory** while others can have both or a combination of learning preferences. Spanella proposes that teachers can help visual learners to better follow what is happening in the classroom by adding visual learning strategies to classroom activities. To better assist visual

learners, teachers can do a number of things, such as using visual aids like pictures, charts, diagrams, or maps during a lecture; avoiding activities that rely on rote memorisation; grouping visual learners together for collaborative learning activities; allowing reflection time after lessons so that learners can stop and visualize what they just learned; letting students draw pictures or build models to reflect information they are learning; showing videos to accompany classroom information; and allowing students to create mind maps rather than take detailed notes during lecture (Spanella, 2017).

3. Is there any difference in the learning styles of the respondents in terms of:

Table 4. Frequency and Percentage Distribution of the Male Respondents' Learning Styles

Learning styles	F	%
Visual	12	30
Auditory	16	40
Kinesthetic	4	10
Auditory&Kinesthetic	2	5
Visual & Auditory	6	15
Total	40	100

Table 4 displays the frequency and percentage distribution of the male respondents' learning styles. There are twelve (12) or 30 percent visual learners while **there are sixteen (16) or 40 percent auditory learners** and four (4) or 10 percent kinesthetic. Moreover, there are two (2) or 5 percent auditory and kinesthetic and six (6) or 15 percent visual and auditory. Male respondents are more oriented towards auditory. Auditory learners best understand new content through listening and speaking in situations such as lectures and discussions. This is in conformity with Pritchard (2014) that auditory learners have good auditory memory and benefit from discussion, lectures, interviewing, hearing stories and audio tapes, for example, they like sequence, repetition and summary, and when recalling memories tend to tilt their head and use level eye movements.

Table 5. Frequency and Percentage Distribution of the Female Respondents' Learning Styles

Learning styles	F	%
Visual	12	44.4
Auditory	5	18.6
Kinesthetic	1	3.7
Auditory & Kinesthetic	3	11.1
Visual & Auditory	4	14.8
Visual & Kinesthetic	1	3.7
Combination of VAK	1	3.7
Total	27	100

Table 5 shows the frequency and percentage distribution of the female respondents' learning styles. **There are twelve (12) or 44.4 percent visual learners** and five (5) or 18.6 percent auditory learners while there is one (1) or 3.7 percent kinesthetic female learner. Seemingly, there are three (3) or 11.1 percent who are both auditory and kinesthetic while four (4) or 14.8 percent both visual and auditory and one (1) or 3.7 percent for visual and kinesthetic and the combination of visual, auditory and kinesthetic respectively. It is observed that female who are visual learners got the highest percentage. This is supported by Spanella (2017) stating that visualization often comes easy to the visual learner because visual learners tend to spend so much time seeing things, they often need make material stand out more. Otherwise, information tends to get lost in their minds. He further emphasized that to remember information, visual learners should use color in their notes, draw things they are visualizing, create mind maps, utilize graphic organizers, diagram information or create charts and outline information contained in books.

Table 6. Frequency and Percentage Distribution of the Morning Respondents' Learning Styles

Learning styles	F	%
Visual	16	34
Auditory	13	27.7
Kinesthetic	3	6.38
Auditory & Kinesthetic	5	10.6
Visual & Auditory	8	17.06
Visual & Kinesthetic	1	2.13
Combination of VAK	1	2.13
Total	47	100

Table 6 shows the frequency and percentage distribution of the morning respondents' learning styles. **There are sixteen (16) or 34 percent visual learners while there are thirteen (13) or 27.7 percent auditory learners** and three (3) or 6.38 percent kinesthetic learners. Likewise, there are five (5) or 10.6 percent both auditory and kinesthetic and eight (8) or 17.06 percent both visual and auditory and one (1) or 2.13 percent for both visual and kinesthetic and the combination of visual, auditory and kinesthetic respectively. These findings form a basis for teachers to vary their teaching strategies to suit the learning needs of part-time students. The University of Massachusetts Dartmouth (2021) offers tips for educators on accommodating different learning styles. For visual learners, they have use maps, flow charts, or webs to organize materials; highlight and colour code books or notes to organise and relate material; have students pick out key words and ideas in their own writing and highlight them in different colours to clearly reveal organizational patterns; write out checklists of needed formulas, commonly misspelled words, etc.; write out and use flash cards for review of material; draw pictures or cartoons of concepts; write down material on slips of paper and move them around into proper sequence which can be done on PC, too; use the chalkboard (them and you) to note important information; and if using the computer, have the student experiment with different font sizes and styles to enhance readability. For auditory learners, the teachers have to engage the students in conversation about the subject matter; question students about the material; ask for oral summaries of material; have them tape lectures and review them; have them tape themselves reviewing material and listen to it together; read material aloud to them; use a talking calculator; and have them put material to a rhythm or tune and rehearse it aloud. Write out checklists of materials to be learned or looked for. In teaching kinesthetic learners, educators have to trace words and diagrams on paper; use textured paper and experiment with different sizes of pens, pencils, and crayons to write down information; use role play or dramatize concepts. Students can move objects around to dramatize a concept or act out the concept themselves; ask the student to envision a scene in which the material to be learned is being used or acted out somehow; have the students take notes on paper, word processor, or in textbooks while reading or listening; and use some form of body movement like snapping fingers, pacing, or mouthing ideas while reciting material to be learnt.

Table 7. Frequency and Percentage Distribution of the Evening Respondents' Learning Styles

Learning styles	F	%
Visual	8	40
Auditory	8	40
Kinesthetic	2	10
Auditory&Kinesthetic	2	10
Total	20	100

Table 7 shows the frequency and percentage distribution of the evening respondents' learning styles. There eight (8) or 40 percent for visual learners and auditory learners while there are two (2) or 20 percent for kinesthetic and both auditory and kinesthetic learners. This finding implies that the evening learners do not rely on tactile representation of information. They are not hands-on learners who learn best through figuring things out by hand. Pritchard (2014) suggests that teachers need to assess the learning styles of their students and adapt their classroom methods to best fit each student's learning style.

Table 8. Mean Response by Gender and their Mean differences

	t-test for Difference of Means by Gender						
Learning Style	t-value	df	p-value	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Visual	-1.158^{ns}	65	.251	-.15625	.13497	-.42580	.11330
Auditory	-2.734**	65	.008	-.41412	.15145	-.71658	-.11166
Kinesthetic	-1.780^{ns}	65	.080	-.29653	.16663	-.62930	.03625

Learning Style	Gender	N	Mean	Std. Deviation	Std. Error Mean
Visual	Female	27	3.5000	.51422	.09896
	Male	40	3.6563	.55955	.08847
Auditory	Female	27	3.3796	.58165	.11194
	Male	40	3.7938	.62503	.09883
Kinesthetic	Female	27	2.7222	.63675	.12254
	Male	40	3.0188	.68964	.10904

The tables present the mean response by gender and their mean differences in visual, auditory, and kinesthetic learning styles. As can be seen, males and females do not significantly differ in visual and kinesthetic ways of learning but they vary statistically in their auditory way of learning. For auditory learning, males tend to be leaning toward auditory more than the female group. This could imply that since most male students are working they are used to listen to different meetings and workshops in their respective work places.

Table 9. Mean Response by Mode of Study and their Mean differences

Learning Style	t-test for Difference of Means by Mode of Study						
	t-value	df	p-value	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Visual	-1.949^{ns}	65	.056	-.27686	.14206	-.56058	.00685
Auditory	-2.020*	65	.047	-.33590	.16628	-.66798	-.00382
Kinesthetic	1.075^{ns}	65	.286	.19495	.18130	-.16713	.55702

Learning Style	MODE OF STUDY	N	Mean	Std. Deviation	Std. Error Mean
Visual	Morning	47	3.5106	.53405	.07790
	Evening	20	3.7875	.52738	.11792
Auditory	Morning	47	3.5266	.62170	.09068
	Evening	20	3.8625	.62553	.13987
Kinesthetic	Morning	47	2.9574	.68429	.09981
	Evening	20	2.7625	.66627	.14898

The tables above present the mean response by mode of study and their mean differences in visual, auditory, and kinesthetic learning styles. Looking at the tables, students registered in morning and evening modes of study do not significantly differ in visual and kinesthetic ways of learning but they vary statistically in their auditory way of learning. Evening students tend to value or use auditory learning methods more than those from the morning group. This indicates that since evening students are mostly working they are accustomed to listening to different conferences and conventions related to their field of work.

4. **What is the degree of influence of respondents' profile in terms of gender and learning style?**

Table 10. Degree of Influence of Respondents' Profile and Learning Style

Correlations			Visual	Auditory	Kinesthetics
Kendall's tau_b	Gender	Correlation Coefficient	.116^{ns}	.262*	.189^{ns}
		p-value	.281	.014	.073
		N	67	67	67
	Mode of Study	Correlation Coefficient	.202^{ns}	.234*	-.144^{ns}
		p-value	.059	.027	.174
		N	67	67	67

*. Correlation is significant at the 0.05 level (2-tailed).
ns not siginificant

It can be gleaned from the table that the degree of influence of the respondents' gender is quite low. The value of the tau-b coefficient of 0.262 signifies that the strength of relationship between gender and auditory learning scores is weak yet significant; or gender variation can explain for the variation in auditory learning scores approximately 7% (0.262 – square) of the time only, hence, 93% of the variation in auditory learning scores can be explained by other lurking variables not included in the study. It also shows that tau b's correlation coefficient value between gender and visual learning scores is 0.116, considered to be having negligible association between the two variables, or has 1.3% (b-square) relation to visual learning scores, consequently, 98.7% of the variation in visual learning is not explained by gender variation. Similarly, the tau-b' coefficient value of 0.189 between gender and kinaesthetic learning scores is deemed weak and not significant, or 3.6% (b-square) of the variation in kinaesthetic learning scores is accounted for by gender variation, 96.4% is due to other factors.

The major finding is that significant relationship exists between mode of study and auditory learning scores.

5. **Does mode of study intervene in the correlation between gender and learning style?**

Table 11. Relationship Between Gender and Learning Styles as moderated by Mode of Study

Control Variable: Partial correlations			Gender
Mode Of Study	Visual	Correlation	.099[ns]
		p-value	.428
		Df	64
	Auditory	Correlation	.286*
		p-value	.020
		Df	64
	Kinaesthetic	Correlation	.250*
		p-value	.043
		Df	64

*. Correlation is significant at the 0.05 level (2-tailed).
ns not siginificant

The table above shows the degree of influence of gender to learning styles. It can be seen from the table that gender as a single predictor has a value of .099 (negligible correlation) which means that gender is not significantly correlated with learning styles. Controlling for mode of study, the relationship between gender and auditory learning scores is weak but significant. This signifies that moderated by the variable "mode of study", the auditory learning style of males is quite different from those of females. In the same manner, moderated for mode of study, the relationship between gender and kinaesthetic learning scores is weak but significant. This appears that when removing the effect of the variable "mode of study", males' kinaesthetic learning style scores differ from those of females.

Summary, Conclusions and Recommendations

Summary of Findings

1. In terms of respondents' profile, out of the sixty-seven (67) respondents, there are forty (40) or 59.7 percent male and twenty-seven (27) or 40.3 percent female. In terms of mode study, there are forty-seven (47) or 70.1 percent morning respondents while there are twenty (20) or 29.9 percent evening respondents.

2. In terms of respondents' learning styles, majority of the respondents are visual learners, others can have both or a combination of learning preferences.

3. For male respondents' learning styles, they are more oriented in auditory with sixteen (16) or 40 percent. For female respondents' learning styles, there are twelve (12) or 44.4 percent. It is observed that female who are visual learners got the highest percentage. For morning respondents' learning styles, they are more visual learners. For evening respondents' learning styles, there are eight (8) or 40 percent for both visual and auditory learners while there are two (2) or 20 percent for kinesthetic and both auditory and kinesthetic learners. This finding implies that the evening learners do not rely on tactile representation of information. As of the mean response by gender and their mean differences in visual, auditory, and kinesthetic learning styles, it can be seen, that male and female respondents do not significantly differ in visual and kinesthetic ways of learning but they vary statistically in their auditory way of learning. For auditory learning, males tend to be leaning toward auditory more than the female group. This could imply that since most male students are working they are used to listen to different meetings and workshops in their respective work places. Seemingly, as for the mean response by mode of study and their mean differences in visual, auditory, and kinesthetic learning styles, students registered in morning and evening modes of study do not significantly differ in visual and kinesthetic ways of learning but they vary statistically in their auditory way of learning. Evening students tend to value or use auditory learning methods more than those from the morning group. This indicates that since evening students are mostly working they are accustomed to listening to different conferences and conventions related to their field of work.

4. The degree of influence of the respondents' gender is quite low. The value of the tau-b coefficient of 0.262 signifies that the strength of relationship between gender and auditory learning scores is weak yet significant. The major finding is that significant

relationship exists between mode of study and auditory learning scores.

5. In terms of relationship between gender and learning styles as moderated by mode of study, Gender as a single predictor has a value of .099 (negligible correlation) which means that gender is not significantly correlated with learning styles. Controlling for mode of study, the relationship between gender and auditory learning scores is weak but significant. This signifies that moderated by the variable "mode of study", the auditory learning style of males is quite different from those of females. In the same manner, moderated for mode of study, the relationship between gender and kinaesthetic learning scores is weak but significant.

Conclusions

The following conclusions were drawn based on the findings:

1. In terms of the mean response by gender and their mean differences in visual, auditory, and kinesthetic learning styles, males and females do not significantly differ in visual and kinesthetic ways of learning but they vary statistically in their auditory way of learning. Hence, teaching methodologies intended for auditory learners must be used appropriately.
2. The strength of relationship between gender and auditory learning scores is weak yet significant. The major finding is that significant relationship exists between mode of study and auditory learning scores. Regardless of gender and mode of study, it is necessary to address auditory or visual learning styles among the students.
3. The relationship between gender and auditory learning the score is weak but significant. Moreover, the moderated by the variable "mode of study", the auditory learning style of males is quite different from those of females. Determining learning style is an advantage for the teachers to determine the appropriate teaching strategy he/she may employ.

Recommendations

Based on the conclusions of the study, the researchers offer the following recommendations:

1. The result of the study may be of great use for the teachers and module coordinators to provide additional learning materials relevant to the learning styles as the study reveals that most respondents are more visual and auditory learners. Even if the relationship between gender and the learning styles is weak yet it is significant. Likewise, there is a significant relationship that exist between mode of study and auditory. Therefore teachers' approach would bring better outcome if the teachers could make use of students' preferred learning styles to provide knowledge.
2. It is recommended that another deeper study may be conducted to strengthen this claim, as the study concerned a limited number of respondents. Having a larger group of respondents statistically obtained will provide better result. The future study relevant to this may involve students across the college or region.
3. It is also recommended that people who are responsible for curriculum development and instruction to look at the current modules and the materials used by the teacher and students and ensure that different learning styles can be employed to maximize learning. For instance, observations of the researchers suggest that auditory and visual learning styles dominate. Hence, auditory learners are well suited on listening activities per se and does not involve other forms of auditory activities such as reading aloud, listening and repeating sentences, and listening to audio podcasts. The researchers came up of a proposed teaching methodologies to be employed in order to meet the learning styles and needs of the students. (See Appendix A)

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